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REMARKS

Claims 1-8 are currently pending. Non-elected claims 9, 10 and 11 have been canceled without prejudice or disclaimer to facilitate allowance of the present application. Two new claims have been added to round out the scope of protection being sought.

The Office Action includes an objection to the written description noting references to claims 1 and 5. These passages on pages 1 and 2 have been changed to avoid mention of specific claims.

The Office Action also includes claim objections. The claims have been extensively revised to place them in more conventional U.S. claim format and, as a result of these other changes, it is believed that each of the concerns underlying these objections raised by the Office have been avoided.

The Office Action also includes a rejection of claims 1, 5 and 7 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. The claims, again for purposes of bringing them into conformance with typical U.S. claim format, have been revised and as amended avoid each of the issues raised in the rejection. Accordingly, it is respectfully submitted that this rejection has been rendered moot and its withdrawal is respectfully requested.

The Office Action also includes a rejection of claims 1-8 under 35 U.S.C. §103 as allegedly being unpatentable over the *Hall et al.* patent (U.S. Patent 6,210,346) this rejection is respectfully traversed.

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The *Hall et al.* patent discloses a method of inserting an intracranial catheter for monitoring an intracranial pressure of a mammal and, ancillary thereto, includes a description of a catheter assembly employing a spectral modulation sensor. This sensor is described beginning at column 12, line 35, for example. A light source 10 such as a laser or a light emitting diode, is said to provide a desire to input light. The light source 10 is coupled to a sensor optical fiber 14 via an input optical fiber 12, optical beam splitter 18 and optical fiber connector 20 connected to the end of the optical sensor fiber is a "spectral modulation sensor" 22. The spectral modulation sensor 22 has an optical substrate 9 supporting an optically resonant structure 21. The optically resonant structure 21, as described beginning at column 13, line 3, comprises separated reflective surfaces 13 and 15 such that the light output from the center 22 is spectrally modulated by the optically resonant structure 21 as a function of the distance between reflective surfaces 13 and 15.

It is respectfully submitted that the *Hall et al.* patent does not meet the recitations of the pending claims, as pointed out by the Examiner. The *Hall et al.* patent does not disclose, for instance, in this context a second light source for generating a reference signal that is not affected by the sensor element.

The Office points, however, to the prior art discussion of an additional light source for generating a reference signal in a different system. What is actually discussed at column 2, beginning at line 52, is a second set of optical fibers for transmitting a reference light beam to and from the location of the sensor. The reference light beam sent to a second photosensor that measures the intensity of the return reference light beam and

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produces a correction signal that compensates for variations in transmittance caused by bending of the catheter.

Hence, even assuming *arguendo* that one would be motivated by the passage at column 2 lines 52-59 to modify the main embodiment of the *Hall et al.* patent to include a second set of optical fibers, the resulting hypothetical device would not meet the recitations of the pending claims as explained in detail below.

The Present Invention

The present invention relates to a method for compensation for bending of an optical fibre in light intensity-based optical measurement systems. As disclosed, the invention can include a sensor element 8 with a cavity 8a and that a first light signal $\lambda 1$ is guided into the cavity 8a where a second light signal $\lambda 2$ is guided into the sensor element but is reflected without entering the cavity, such as shown in Figure 1a, without being influenced by the cavity and the measurements taken thereby. Further, both of the first light signal $\lambda 1$ and a second light signal $\lambda 2$ are guided through a single optical fiber 4 and are detected by means of two detectors 13 and 14, for example.

As reflected in pending claim 1, the present invention is distinct from the *Hall et al.* apparatus and recite the first light signal $\lambda 1$ (the "measurement signal") and the second light signal $\lambda 2$ (the "reference signal") according to the invention are guided to the same optical fiber this has the advantage that the same optical path is being measured. This is in contrast to a system, such as the prior art system as described in the *Hall et al.* patent that

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required two sets of optical paths, one of which might be damaged or bent more than the other, resulting in a mis-calibration.

For this reason, it is respectfully submitted that claims 1 and 5, and therefore the claims dependant therefrom, are allowable and Applicants respectfully request withdrawal of this rejection.

Another distinguishing aspect of the invention, as reflected in independent claims 1 and 5, is that the sensor is manufactured in such a manner that the measurement light will be separated from the reference light, e.g., the first light signal will be selected to exceed its limit for threshold of the sensor whereas the second light signal will be lower than its limit, for example.

Finally, dependent claim 12 has been added to clearly recite that the present invention comprises a cavity (e.g., cavity 8a) into which a first signal is guided, whereas the second signal is reflected by a sensor element (such as sensor element 8) and guided back into the optical fiber as shown in Figure 1a, but without entering the cavity. This is a further distinction from the applied prior art.

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In light of the foregoing, Applicants respectfully request reconsideration and allowance of the above-captioned application. If any residual issues exist, the Examiner is invited to contact the undersigned at the number listed below.

Respectfully submitted,

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